

SVKM's
D. J. Sanghvi College of Engineering

Program: B.Tech in Mechanical Engineering

Academic Year: 2022

Duration: 3 hours

Date: 06.01.2023

Time: 10:30 am to 01:30 pm

Subject: Additive Manufacturing (Semester VII)

Marks: 75

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover page of the Answer Book, which is provided for their use.

- (1) This question paper contains two pages.
- (2) All Questions are Compulsory.
- (3) All questions carry equal marks.
- (4) Answer to each new question is to be started on a fresh page.
- (5) Figures in the brackets on the right indicate full marks.
- (6) Assume suitable data wherever required, but justify it.
- (7) Draw the neat labelled diagrams, wherever necessary.

Question No.		Max. Marks
Q1 (a)	Discuss product development cycle and explain each stage of it in detail.	[10]
	OR	
	Discuss product life cycle and explain each stage of it in detail.	[10]
Q1 (b)	Explain with an example impact of short product life cycle on development of new product.	[05]
	OR	
	Write a short note on entrepreneurial competition as an obstacle to new product development.	[05]
Q2 (a)	Explain Vat Photo Polymerization additive manufacturing, with the help of diagram, explain any one process under this class in detail. discuss its advantages compare to other additive manufacturing processes.	[10]
Q2 (b)	Write a short note on Directed energy deposition additive manufacturing	[05]
	OR	
	Discuss seven classes of additive manufacturing.	[05]
Q3 (a)	Write a short note on Quality Management in Additive Manufacturing	[05]
	OR	
	Discuss post processes involved in additive manufacturing processes.	[05]

Q3 (b)	Discuss selection parameters considered for material selection for various additive manufacturing process. Enlist material used in various types of additive manufacturing processes and discuss its properties.	[10]
Q4 (a)	Enlist Various application of additive manufacturing, Explain any two in detail.	[10]
Q4 (b)	Discuss architecture and civil engineering applications of additive manufacturing in detail, discuss with an example. OR Compare advantages and disadvantages of additive manufacturing and conventional manufacturing.	[05] [05]
Q5 (a)	Discuss different formats of referencing and Enlist various reference manager available for research writing. OR Discuss flow of a research article (Enlist various sections), and discuss in detail how to write an abstract for research article.	[05] [05]
Q5 (b)	Explain Fused deposition modelling in detail, discuss its advantages and compare it to other additive manufacturing processes. discuss materials used in this process.	[10]